

Date: Wed, 9 Mar 94 04:30:31 PST
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>
Errors-To: Ham-Homebrew-Errors@UCSD.Edu
Reply-To: Ham-Homebrew@UCSD.Edu
Precedence: Bulk
Subject: Ham-Homebrew Digest V94 #55
To: Ham-Homebrew

Ham-Homebrew Digest Wed, 9 Mar 94 Volume 94 : Issue 55

Today's Topics:

 Center Tap RF transf.?WHERE?
 charging battery pak
 FM BROADCAST BAND RF AMP
 Making LEX work...
 microwave oven magnitron transmitters (2 msgs)
 Question: Capacitor types??
 Reducing Tube Filament Voltage
 Tuner-tuner
 Using switcher PS for 12 volt HF rig power? (3 msgs)

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 8 Mar 1994 15:28:47 GMT
From: ihnp4.ucsd.edu!usc!elroy.jpl.nasa.gov!swrinde!gatech!concert!news.wfu.edu!
ac!pendlewe@network.ucsd.edu
Subject: Center Tap RF transf.?WHERE?
To: ham-homebrew@ucsd.edu

It is surprisingly difficult to find a center tapped transformer for use at
~1/2 to ~2.5 MHz. Help?

Thanks
Bill Pendleton

Wake Forest Univ.
Physics Dept.

Date: Tue, 8 Mar 94 21:02:00 -0700
From: netcomsv!netcomsv!toadhall!ronald.hobbs@decwrl.dec.com
Subject: charging battery pak
To: ham-homebrew@ucsd.edu

I happened upon a little 3 AH battery pack of generic Taiwanese origin that states in its manual that it must only be charged with the "supplied 15 volt 650 MW AC adapter." I don't have such an adapter and would like to know if there are any acceptable compromises (it has a 3-amp fuse wired into the circuit).

I have a one amp motorcycle trickle charger on hand, and alot of twelve volt sources on hand, but the AC adapters that I have arent even close to the recommended power source.

Does anybody have one of these queer duck adapters, are they available in areas that I might not know about, or, again, what about compromises?

Thanks, Ron KC6VHU

, SLMR 2.1a , Vouchsafe linguistic pretentiousities.

Date: 5 Mar 94 16:55:46 GMT
From: agate!ihnp4.ucsd.edu!swrinde!sgiblab!wetware!spunky.RedBrick.COM!psinntp!psinntp!iat.holonet.net!rohrwerk@ucbvax.berkeley.edu
Subject: FM BROADCAST BAND RF AMP
To: ham-homebrew@ucsd.edu

ez006683@chip.ucdavis.edu (Daniel D. Todd) writes:

>Donald Zarda (dzarda@saucer.cc.umn.edu) wrote:

>: Does anyone have plans or know of a way to boost the output of the
>: BA1404 stereo chip? I have a small 88-108 MHz stereo transmitter and I
>: need to boost the signal to reach about 3 miles. I need something very soon!
>: If so please reply. Thanks.

>sniff, sniff, do you smell smoke?
>:-)

>Dan

Whoa, now! The Friendly Candy Company has something to say about this.

There are strict power limits for such unlicensed devices broadcasting in commercial broadcast bands. Maybe somebody else has specifics, but I'm almost certain it's real flea power and a definite limit on antenna and feedline length.

You NEED it very soon? Hmmmm.

John K0JD

Date: 8 Mar 94 21:42:37 GMT
From: news-mail-gateway@ucsd.edu
Subject: Making LEX work...
To: ham-homebrew@ucsd.edu

Well, I have obtained a copy of FLEX and made it compile (When the person who wrote the MAKEFILE said that it **should** compile obviously hadn't tried... under MeSsyDOS, that is...) It seems to produce the "sample" file OK, but there appears to be something wrong...

First, you see the line:

```
#define yy leng (yy_cp - yy_bp)
```

Then, as if to be clever, you see lines in the code that do things like:

```
yy leng = 1;
```

AND (it gets better...)

```
yy leng++;
```

Yeah, right!

Either this version of FLEX is 'broke, or the lexical construct is flawed, or was written for a different version...

I grabbed CUG290 from a local BBS, and it included a DOS compilation, but it somehow failed to include a file called "skelcom.h" An archie search has failed to locate that...

BTW, I'm trying to compile the "z8dev" package. This was found on keos.helsinki.fi. It requires both LEX and YACC... The YACC was no problem (I used BYACC...)

Thanks,

<Clint>

Date: 9 Mar 94 05:08:56 GMT
From: ihnp4.ucsd.edu!usc!math.ohio-state.edu!cyber2.cyberstore.ca!nntp.cs.ubc.ca!
unixg.ubc.ca!unixg.ubc.ca!bnowak@network.ucsd.edu
Subject: microwave oven magnitron transmitters
To: ham-homebrew@ucsd.edu

Since recieving an amateur rado licence I have developed an interest
in UHF and microwave communications.
Along with this new interest I find myself wondering if the magnitron in
the microwave oven could be employed in a transmitter.
If it can how and what wave length do they operate at ?

If someone could advise me of some good books on the subject I would
appreciate it.

73

Brad Nowak VE7QBN
--
Brad Nowak VE7QBN

Date: Wed, 9 Mar 1994 09:38:55 GMT
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!gatech!wa4mei!ke4zv!
gary@network.ucsd.edu
Subject: microwave oven magnitron transmitters
To: ham-homebrew@ucsd.edu

In article <bnowak.763189736@unixg.ubc.ca> bnowak@unixg.ubc.ca (Bradley Nowak)
writes:

>Since recieving an amateur rado licence I have developed an interest
>in UHF and microwave communications.
>Along with this new interest I find myself wondering if the magnitron in
>the microwave oven could be employed in a transmitter.
>If it can how and what wave length do they operate at ?

Yes, microwave oven magnetrons can be used for amateur purposes. There
was an article in 73 Magazine detailing a magnetron used for FM ATV on
our 2.3 GHz band.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

Date: Wed, 9 Mar 1994 09:37:12 GMT
From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!gatech!wa4mei!ke4zv!
gary@network.ucsd.edu
Subject: Question: Capacitor types??
To: ham-homebrew@ucsd.edu

In article <CROFTW.3.000A9340@caedm.et.byu.edu> CROFTW@caedm.et.byu.edu (Richard Croft) writes:

>I am collecting some parts for a 35 Watt amplifier kit. The parts list calls
>for several different kinds of capacitors (silver mica, metal clad, disc,
>chip, ceramic, tant). Would someone please tell me if the type of capacitor
>is absolutely necessary or can I just use any type with the proper capacitance
>rating? If I need the special type of capacitor, what is the difference?

Different circuit elements have different requirements. That's why there are different capacitor types with the same voltage and capacitance ratings. You have to understand the purpose of a particular capacitor in a given circuit to determine what type of capacitor is suitable. Silver mica capacitors are generally used where accuracy and known temperature characteristics are required. Disc ceramic capacitors are more likely to be used in non-critical bypass or coupling circuits. Chip capacitors are used where low inductance packaging is critical, or where space is very tight. Tantalum capacitors are used where high values of capacitance in a small space are needed, such as for power supply filtering or audio coupling. Metal clad polyester capacitors are used in applications similar to those for silver mica where stability of value, and often RF current carrying capacity, are critical parameters. Unless you understand the reason why a particular capacitor type was chosen for a given design, use the type specified.

Gary

--

Gary Coffman KE4ZV		You make it,		gatech!wa4mei!ke4zv!gary
Destructive Testing Systems		we break it.		uunet!rsiatl!ke4zv!gary
534 Shannon Way		Guaranteed!		emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244				

Date: Tue, 8 Mar 1994 13:50:14 GMT
From: ihnp4.ucsd.edu!usc!math.ohio-state.edu!sol.ctr.columbia.edu!

jabba.ess.harris.com!mlb.semi.harris.com!controls.ccd.harris.com!
drs@network.ucsd.edu
Subject: Reducing Tube Filament Voltage
To: ham-homebrew@ucsd.edu

In my reading about linear amplifier design and construction I have noticed in a couple of writings that if the filament voltage on say, a 3-500Z tube, is reduced from the typical 5.0 VAC to around 4.8 or 4.9 volts, tube life can be extended several fold.

In an article by AG6K on QSK for the TL-922 and SB-220 he mentions that a good method of reducing the filament voltage (at the socket) is by using smaller gauge wire from the transformer to the socket. He mentions that it should have good (teflon) insulation. My question is: Is this really the best way to reduce the voltage? Seems like varying line voltage would necessitate using some sort of rheostat? Any ingenious methods out there? I am planning on using a step-start relay to initially start the filament voltage low to reduce inrush current on a 4-1000 tube.

I have already implemented his method of biasing the tubes by putting a string of diodes in the cathode return line. This is in place of using a high wattage zener. This works fine, as you can fine tune the idle current on the tubes by the number of series diodes.

--

Doug Snowden
drs@ccd.harris.com
N4IJ

Date: 8 Mar 1994 16:31:01 GMT
From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!europa.eng.gtefsd.com!
news.umbc.edu!eff!news.kei.com!yeshua.marcam.com!charnel!olivea!inews.intel.com!
scdt!dbraun@network.ucsd.edu
Subject: Tuner-tuner
To: ham-homebrew@ucsd.edu

In article <CMBG6A.G6J@synoptics.com>, dbashaw@synoptics.com (David Bashaw) writes:

|> I thought about one of those, but I thought there must be a 0 \$ answer.
|> So on my rig I try to get the same results by: (FWIW)
|>
|> 1: RF gain at minimum
|> 2: AF gain at maximum
|> 3: advance RF gain until some noise is heard.
|> 4: adjust the antenna tuner for maximum noise. This should be a good starting place.

|> 5: start checking swr at low power (to be considerate of others and your finals).

I have been disappointed when trying to tune the tuner by listening. It seems to be due to:

- 1: The input impedance of the receiver is often much different than $50+0j$ ohms.
- 2: You can barely detect a 3 db signal change (even with the AGC off), and a 3 DB loss probably corresponds to something like 3:1 SWR (I don't have my handy little Forward/Reflected SWR nomograph handy...)

Sometimes if I am tuned correctly for transmission, I can get a noticeably better receive signal by re-adjusting the tuner...

--

Doug Braun

Intel Design Technology
408 765-4279

dbraun@scdt.intel.com

```
or maybe:      / decwrl \  
                | hplabs |  
-| oliveb |- !intelca!mipos3!cadev6!dbraun  
                | amd    |  
                \ qantel /
```

"There is no human problem which could not be solved if people would simply do as I advise." -- Gore Vidal

Date: Tue, 8 Mar 1994 10:38:05 GMT
From: ihnp4.ucsd.edu!library.ucla.edu!csulb.edu!csus.edu!netcom.com!
dgf@network.ucsd.edu
Subject: Using switcher PS for 12 volt HF rig power?
To: ham-homebrew@ucsd.edu

In article <CMBLpK.C37@srngenprp.sr.hp.com> donrm@sr.hp.com (Don Montgomery) writes:

>Hank Riley (au156@yfn.ysu.edu) wrote:

>

>> Has anyone ever tried to use a switching type power supply to handle

>

>Yes, my entire HF station (minus the 30L1 linear) runs off a 12VDC/88Amp

>Lambda switching supply, and yes, I had to filter the switching noise

I used one of these to power a Metron MA-1000 amplifier (12V, big amps during TX)... I got alot of loud popping noise (accoustic) from the supply during SSB current swings (along with unstable output voltage). Not sure if it was RF getting back into the supply or the dynamic load current, but anyway I did not continue using the supply for this application. 73 Dave WB0GAZ.

Date: 8 Mar 1994 15:09:02 GMT
From: ihnp4.ucsd.edu!usc!elroy.jpl.nasa.gov!swrinde!cs.utexas.edu!
howland.reston.ans.net!vixen.cso.uiuc.edu!ux2.cso.uiuc.edu!ignacy@network.ucsd.edu
Subject: Using switcher PS for 12 volt HF rig power?
To: ham-homebrew@ucsd.edu

au156@yfn.ysu.edu (Hank Riley) writes:

>Has anyone ever tried to use a switching type power supply to handle
>the 12 volt, approx. 20 amp requirement of typical 100 watt SSB HF
>rigs?

>

>I realize that this is not customary, and is probably not
>recommended, that's why I'm asking.

>

>Any problems with whine, poor transient regulation, etc?

>

> Hank, N1LTV

I once used a 3 lb switching power supply made for Yaesu 757. It worked fine with good antennas. I purchased it because I wanted a light rig; a mobile rig with a regular PS is heavier than a rig with a built-in PS. With room or attic antennas this PS generated extensive noise despite multi-stage filtering. Imagine my consternation when I tried to show my rig in an elementary school using a few feet of wire and all the children could hear was noise! Also the PS was once damaged by a static. I replaced this PS by a one with transformer, and now ithe new PS's buzzing noise and a large weight irritate me too.

Ignacy Misztal, N09E
University of Illinois
ignacy@uiuc.edu

Date: 8 Mar 1994 16:37:07 GMT
From: ihnp4.ucsd.edu!swrinde!cs.utexas.edu!math.ohio-state.edu!
sol.ctr.columbia.edu!news.kei.com!yeshua.marcam.com!charnel!olivea!
inews.intel.com!scdt!dbraun@network.ucsd.edu

Subject: Using switcher PS for 12 volt HF rig power?
To: ham-homebrew@ucsd.edu

In article <CMBLpK.C37@srigenprp.sr.hp.com>, donim@sr.hp.com (Don Montgomery) writes:

```
|> Hank Riley (au156@yfn.ysu.edu) wrote:
|>
|> > Has anyone ever tried to use a switching type power supply to handle
|>
|> Yes, my entire HF station (minus the 30L1 linear) runs off a 12VDC/88Amp
|> Lambda switching supply, and yes, I had to filter the switching noise
|> (harmonics) off the AC input and DC output.
```

What a beast of a power supply... Mine is only a 42 amp Lambda model.
I don't have any extra filtering, except one toroid on the rig's power cable,
and I have no problem with RFI. BUT, if your antenna is right next to the PS,
you will hear some noise.

I do have a wierd problem though: The PS sort of acts like a speaker.
on SSB, it buzzes in step with the voice peaks, and on AM, I bet you
could almost make out what I am saying. Also, it buzzes when the toaster
in the kitchen is on. This is handy for letting me know then the toast is
ready...

You see millions of the 5 volt models at swap meets and surplus places.
A lot of people use 3 of them in series, each one turned down half a volt
or so.

Doug Braun

Intel Design Technology
408 765-4279

dbraun@scdt.intel.com

```
                / decwrl \
                | hplabs |
or maybe:      -| oliveb |- !intelca!mipos3!cadev6!dbraun
                | amd    |
                \ qantel /
```

"There is no human problem which could not be solved if
people would simply do as I advise." -- Gore Vidal

Date: Wed, 9 Mar 1994 01:59:46 GMT
From: ihnp4.ucsd.edu!library.ucla.edu!csulb.edu!csus.edu!netcom.com!

gscott@network.ucsd.edu
To: ham-homebrew@ucsd.edu

References <2l8gp3\$ik1@l1l1-winken.1ln1.gov>, <2lebkc\$kmk@hpscit.sc.hp.com>,
<2lh20r\$auf@bigfoot.wustl.edu>
Subject : Re: GPS Receiver Boards

Jesse L Wei (j1w3@cec3.wustl.edu) wrote:
: Richard Karlquist (rkarlqu@scd.hp.com) wrote:
: : The Motorola GPS receiver is less than \$150 in 100's. It has six
: : channels and just about all the features you would ever want.

: The question is: who's going to be buying in 100's?

I'll take one. Now you only have 99 more to get rid of!

Gavin

--

Gavin Scott - Quest Software Inc - gavin@quests.com -or- gscott@netcom.com

Date: 8 Mar 1994 05:21:31 GMT
From: ihnp4.ucsd.edu!swrinde!gatech!howland.reston.ans.net!wupost!
bigfoot.wustl.edu!cec3!j1w3@network.ucsd.edu
To: ham-homebrew@ucsd.edu

References <jyoungberg.1.000B87CC@draper.com>, <2l8gp3\$ik1@l1l1-winken.1ln1.gov>,
<2lebkc\$kmk@hpscit.sc.hp.com>c3
Subject : Re: GPS Receiver Boards

Richard Karlquist (rkarlqu@scd.hp.com) wrote:
: The Motorola GPS receiver is less than \$150 in 100's. It has six
: channels and just about all the features you would ever want.

: Rick Karlquist N6RK
: rkarlqu@scd.hp.com

The question is: who's going to be buying in 100's?

End of Ham-Homebrew Digest V94 #55
